WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

at least one thin film transistor including a semiconductor layer that has a crystalline region including a channel region, a source region and a drain region, a gate insulating film disposed at least on the channel region, the source region and the drain region of the semiconductor layer, and a gate electrode arranged so as to oppose the channel region via the gate insulating film; wherein

at least a portion of the semiconductor layer includes a catalyst element capable of promoting crystallization, and the semiconductor layer further includes a gettering region that includes the catalyst element at a higher concentration than in the channel region or the source region and the drain region; and

a thickness of the gate insulating film on the gettering region is smaller than that on the source region and the drain region, or the gate insulating film is not disposed on the gettering region.

2. The semiconductor device according to claim 1, wherein the semiconductor layer further includes an amorphous region, and at least a portion of the gettering region is disposed in the amorphous region.

3. The semiconductor device according to claim 1, wherein at least a portion of the gettering region is disposed in the crystalline region.

4. The semiconductor device according to claim 3, wherein the at least a portion of the gettering region disposed in the crystalline region has a larger amorphous component content and a smaller crystalline component content than those of the channel region or the source region and the drain region.

5. The semiconductor device according to claim 1, further comprising a p-channel thin film transistor and an n-channel thin film transistor, wherein the at least one thin film transistor is the p-channel thin film transistor.

6. The semiconductor device according to claim 1, further comprising a p-channel transistor and an n-channel transistor, wherein the at least one thin film transistor is the n-channel thin film transistor.

7. The semiconductor device according to claim 1, wherein the at least one thin film transistor includes a p-channel thin film transistor and an n-channel thin film

transistor.

8. The semiconductor device according to claim 1, wherein the gettering region is located outside a region through which electrons or holes move during an operation of the at least one thin film transistor.

9. The semiconductor device according to claim 1, wherein the gettering region is arranged so as not to be adjacent to the channel region.

10. The semiconductor device according to claim 1, further comprising a line connected to the at least one thin film transistor, wherein the gettering region is disposed in a peripheral portion of the semiconductor layer, an electrical connection of the line is made in at least a portion of the source region or the drain region, and the line is not connected to the gettering region.

11. The semiconductor device according to claim 1, further comprising a line connected to the at least one thin film transistor, wherein the gettering region is disposed in a peripheral portion of the semiconductor layer, and an electrical connection of the line is made in at least a portion of the source region or the drain region and in a

portion of the gettering region.

12. The semiconductor device according to claim 1, wherein the at least one thin film transistor includes an n-channel thin film transistor, and the gettering region of the n-channel thin film transistor includes a group VB impurity element providing n-type conductivity at a higher concentration than in the source region or the drain region.

13. The semiconductor device according to claim 1, wherein the gettering region includes a gettering element capable of attracting the catalyst element.

14. The semiconductor device according to claim 13, wherein the gettering region includes a group VB impurity element providing n-type conductivity and a group IIIB impurity element providing p-type conductivity each as the gettering element.

15. The semiconductor device according to claim 14, wherein the gettering region includes the impurity element providing n-type conductivity at a concentration of about $1x10^{19}/cm^3$ to about $1x10^{21}/cm^3$ and the impurity element providing p-type conductivity at a concentration of about $1.5x10^{19}/cm^3$ to about $3x10^{21}/cm^3$.

16. The semiconductor device according to claim 13, wherein the gettering element includes at least one rare gas element selected from the group consisting of Ar, Kr and Xe.

17. The semiconductor device according to claim 16, wherein a concentration of the at least one rare gas element in the gettering region is about $1x10^{19}/cm^3$ to about $3x10^{21}$ atoms/cm^3.

18. The semiconductor device according to claim 1, wherein the catalyst element includes at least one element selected from the group consisting of Ni, Co, Sn, Pb, Pd, Fe and Cu.

19. The semiconductor device according to claim 1, wherein a concentration of the catalyst element in the gettering region is about $5x10^{18}$ atoms/cm^3 or more.

20. The semiconductor device according to claim 1, wherein the gate electrode includes at least one metal element selected from the group consisting of W, Ta, Ti and Mo.

21. The semiconductor device according to claim 1,

wherein the crystalline region further includes at least one of an LDD region at a junction between the channel region and the source region and a junction between the channel region and the drain region.

22. A method for manufacturing a semiconductor device, comprising the steps of:

providing an amorphous semiconductor film including a catalyst element in at least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous semiconductor film;

performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a crystalline region;

patterning the semiconductor film to form an island-shaped semiconductor layer including the crystalline region;

forming a gate insulating film on the island-shaped semiconductor layer;

selectively thinning or selectively removing a portion of the gate insulating film that is located outside a region of the island-shaped semiconductor layer where a channel region, a source region and a

drain region are formed;

forming a gettering region capable of attracting the catalyst element in a region where the gate insulating film on the island-shaped semiconductor layer has been thinned or removed;

doping the crystalline region of the island-shaped semiconductor layer with an impurity for forming the source region and the drain region; and

performing a second heat treatment so as to move at least a portion of the catalyst element in the island-shaped semiconductor layer to the gettering region.

23. The method for manufacturing a semiconductor device according to claim 22, wherein the island-shaped semiconductor layer further includes an amorphous region, and at least a portion of the gettering region is formed in the amorphous region.

24. The method for manufacturing a semiconductor device according to claim 22, wherein at least a portion of the gettering region is formed in the crystalline region.

25. The method for manufacturing a semiconductor device according to claim 22, wherein the impurity doping step includes a step of doping at least one of an n-type impurity

and a p-type impurity before performing the second heat treatment.

26. The method for manufacturing a semiconductor device according to 22, wherein the step of forming the gettering region includes a step of doping the island-shaped semiconductor layer with a gettering element capable of attracting the catalyst element.

27. The method for manufacturing a semiconductor device according to claim 26, wherein at least a portion of the impurity doping step is performed before the gettering element doping step.

28. The method for manufacturing a semiconductor device according to claim 26, wherein at least a portion of the impurity doping step is performed after the gettering element doping step.

29. The method for manufacturing a semiconductor device according to claim 26, wherein at least a portion of the impurity doping step is performed simultaneously with the gettering element doping step.

30. The method for manufacturing a semiconductor device

according to claim 26, wherein the gettering element doping step is performed by selectively doping a region of the island-shaped semiconductor layer where the gate insulating film has been thinned or removed, with a gettering element.

31. The method for manufacturing a semiconductor device according to claim 25, wherein the gettering element doping step includes a step of doping a region of the island-shaped semiconductor layer where the gate insulating film has been thinned or removed, with a gettering element at a higher concentration than that in the source region and the drain region.

32. The method for manufacturing a semiconductor device according to claim 26, wherein the gettering element includes a group VB impurity element providing n-type conductivity.

33. The method for manufacturing a semiconductor device according to claim 26, wherein the gettering element includes a group VB impurity element providing n-type conductivity and a group IIIB impurity element providing p-type conductivity.

34. The method for manufacturing a semiconductor device according to claim 26, wherein the gettering element includes at least one element selected from the group consisting of

Ar, Kr and Xe.

35. The method for manufacturing a semiconductor device according to claim 26, wherein a concentration of the gettering element in the gettering region is about $1x10^{19}$atoms/cm^3 to about $3x10^{21}$ atoms/cm^3.

36. The method for manufacturing a semiconductor device according to claim 22, wherein the gettering region formation step includes a step of amorphizing a region of the island-shaped semiconductor layer where the gate insulating film has been thinned or removed to a higher degree than the source region and the drain region.

37. The method for manufacturing a semiconductor device according to claim 22, wherein the gettering region is formed in the island-shaped semiconductor layer outside a region thereof through which electrons or holes move.

38. The method for manufacturing a semiconductor device according to claim 21, wherein the gettering region is formed so as to be adjacent to at least one of the source region and the drain region and so as not to be adjacent to the channel region.

39. The method for manufacturing a semiconductor device according to claim 21, further comprising, after the second heat treatment step, a step of forming a line that is in contact with a region including at least a portion of the source region or the drain region.

40. A method for manufacturing a semiconductor device, comprising the steps of:

providing an amorphous semiconductor film including a catalyst element in at least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous semiconductor film;

performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a crystalline region;

patterning the semiconductor film to form a plurality of island-shaped semiconductor layers each including the crystalline region;

forming a gate insulating film on each of the plurality of island-shaped semiconductor layers;

forming a gate electrode on the gate insulating film on each of the plurality of island-shaped semiconductor layers;

selectively thinning or selectively removing a portion of the gate insulating film that is located outside a region of at least one of the plurality of island-shaped semiconductor layers where a source region and a drain region are formed and that is located in a region where the gate electrode is not formed;

performing a doping process for forming the source region and the drain region in each of the plurality of island-shaped semiconductor layers and for forming a gettering region capable of attracting the catalyst element in a region of the at least one island-shaped semiconductor layer where the gate insulating film has been thinned or removed; and

performing a second heat treatment so as to move at least a portion of the catalyst element in the at least one island-shaped semiconductor layer to the gettering region.

41. The method for manufacturing a semiconductor device according to claim 40, wherein the island-shaped semiconductor layer further includes an amorphous region, and at least a portion of the gettering region is formed in the amorphous region.

42. The method for manufacturing a semiconductor device

according to claim 40, wherein at least a portion of the gettering region is formed in the crystalline region.

43. The method for manufacturing a semiconductor device according to claim 40, wherein the at least one island-shaped semiconductor layer includes an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, the doping step including:

an n-type doping step of doping a region of the island-shaped semiconductor layer of the n-channel thin film transistor where the source region and the drain region are formed and a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the gettering region is formed, with an impurity element providing n-type conductivity; and

a p-type doping step of, after the n-type doping step, doping a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the source region, the drain region and the gettering region are formed, with an impurity element providing p-type conductivity.

44. The method for manufacturing a semiconductor device according to claim 40, wherein the at least one island-shaped

semiconductor layer includes an island-shaped semiconductor layer of a p-channel thin film transistor, and the plurality of island-shaped semiconductor layers further include an island-shaped semiconductor layer of an n-channel thin film transistor, the doping step including:

a p-type doping step of doping a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the source region, the drain region and the gettering region are formed, with an impurity element providing p-type conductivity; and

an n-type doping step of, after the p-type doping step, doping a region of the n-channel thin film transistor where the source region and the drain region are formed and a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the gettering region is formed, with an impurity element providing n-type conductivity.

45. The method for manufacturing a semiconductor device according to claim 40, wherein the at least one island-shaped semiconductor layer includes an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, the doping step including:

an n-type doping step of doping a region of the

island-shaped semiconductor layer of the n-channel thin film transistor where the source region, the drain region and the gettering region are formed and a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the gettering region is formed, with an impurity element providing n-type conductivity; and

a p-type doping step of, after the n-type doping step, doping a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the source region, the drain region and the gettering region are formed and a region of the island-shaped semiconductor layer of the n-channel thin film transistor where the gettering region is formed, with an impurity element providing p-type conductivity.

46. The method for manufacturing a semiconductor device according to claim 40, wherein the at least one island-shaped semiconductor layer includes an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, the doping step including:

a p-type doping step of doping a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the source region, the drain

region and the gettering region are formed and a region of the island-shaped semiconductor layer of the n-channel thin film transistor where the gettering region is formed, with an impurity element providing p-type conductivity; and

an n-type doping step of, after the p-type doping step, doping a region of the island-shaped semiconductor layer of the n-channel thin film transistor where the source region, the drain region and the gettering region are formed and a region of the island-shaped semiconductor layer of the p-channel thin film transistor where the gettering region is formed, with an impurity element providing n-type conductivity.

47. The method for manufacturing a semiconductor device according to claim 40, wherein:

the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer includes a step of forming a mask on the source region and the drain region of the at least one island-shaped semiconductor layer, and a step of etching the gate insulating film using the mask; and

the mask is used in the doping step.

48. The method for manufacturing a semiconductor device according to claim 43, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer is performed between the n-type doping step and the p-type doping step.

49. The method for manufacturing a semiconductor device according to claim 44, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer is performed between the n-type doping step and the p-type doping step.

50. The method for manufacturing a semiconductor device according to claim 48, wherein:

the p-type doping step includes a step of forming a mask covering a region of each of the plurality of island-shaped semiconductor layers that does not need to be doped with an impurity element providing p-type conductivity; and

the mask is used in the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer.

51. The method for manufacturing a semiconductor device according to claim 49, wherein:

the n-type doping step includes a step of forming a mask covering a region of each of the plurality of island-shaped semiconductor layers that does not need to be doped with an impurity element providing n-type conductivity; and

the mask is used in the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer.

52. The method for manufacturing a semiconductor device according to claim 50, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film of the at least one island-shaped semiconductor layer includes a step of removing the mask.

53. A method for manufacturing a semiconductor device, comprising:

a first step of providing an amorphous semiconductor film including a catalyst element in at least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous

semiconductor film;

a second step of performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a crystalline region;

a third step of patterning the semiconductor film to form a plurality of island-shaped semiconductor layers including an island-shaped semiconductor layer of a p-channel thin film transistor and an island-shaped semiconductor layer of an n-channel thin film transistor, each of the plurality of island-shaped semiconductor layers including the crystalline region;

a fourth step of forming a gate insulating film on the plurality of island-shaped semiconductor layers;

a fifth step of forming a conductive film on the gate insulating film and shaping the conductive film to form a first gate electrode on the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor;

a sixth step of doping the island-shaped semiconductor layer of the p-channel thin film transistor with an impurity element providing p-type conductivity using the first gate electrode as a mask so as to form a source region, a drain region and a

gettering region capable of attracting the catalyst element;

a seventh step of forming, on the conductive film, a mask that exposes a portion of the island-shaped semiconductor layer of the p-channel thin film transistor, covers the first gate electrode, and defines a second gate electrode formed on the island-shaped semiconductor layer of the n-channel thin film transistor;

an eighth step of shaping the conductive film using the mask to form the second gate electrode;

a ninth step of doping regions of the plurality of island-shaped semiconductor layers that are not covered with the mask, the first gate electrode or the second gate electrode, with an impurity element providing n-type conductivity, thereby further doping the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor with an n-type impurity while forming a source region and a drain region of the island-shaped semiconductor layer of the n-channel thin film transistor; and

a tenth step of performing a second heat treatment so as to move at least a portion of the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor to the gettering region

thereof and at least a portion of the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor to the source region and the drain region thereof;

wherein a step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor is performed at least once at any point in time between after the seventh step to after the eighth step.

54. The method for manufacturing a semiconductor device according to claim 53, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor is performed simultaneously with the eighth step using the mask that exposes a portion of the island-shaped semiconductor layer of the p-channel thin film transistor.

55. A method for manufacturing a semiconductor device, comprising the steps of:

a first step of providing an amorphous semiconductor film including a catalyst element in at

least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous semiconductor film;

a second step of performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a crystalline region;

a third step of patterning the semiconductor film to form a plurality of island-shaped semiconductor layers including an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, each of the plurality of island-shaped semiconductor layers including the crystalline region;

a fourth step of forming a gate insulating film on the plurality of island-shaped semiconductor layers;

a fifth step of forming a first gate electrode on the gate insulating film on the island-shaped semiconductor layer of the n-channel thin film transistor, and forming a second gate electrode conductive layer on the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor;

a sixth step of doping the island-shaped

semiconductor layers with an impurity element providing n-type conductivity using the first gate electrode and the second gate electrode conductive layer as a mask so as to form a source region and a drain region in the island-shaped semiconductor layer of the n-channel thin film transistor while forming a gettering region capable of attracting the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor;

a seventh step of forming a mask that covers the island-shaped semiconductor layer of the n-channel thin film transistor and a portion of the second gate electrode conductive layer;

an eighth step of shaping the second gate electrode conductive layer using the mask to form the second gate electrode;

a ninth step of doping regions of the plurality of island-shaped semiconductor layers that are not covered with the mask or the second gate electrode, with an impurity element providing p-type conductivity, thereby further doping the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor with a p-type impurity while forming a source region and a drain region; and

a tenth step of performing a second heat treatment

so as to move at least a portion of the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor to the gettering region thereof and at least a portion of the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor to the source region and the drain region thereof;

wherein a step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor is performed at least once at any point in time between after the fifth step to after the eighth step.

56. The method for manufacturing a semiconductor device according to claim 55, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of the p-channel thin film transistor is performed simultaneously with the eighth step using the first gate electrode as a mask.

57. A method for manufacturing a semiconductor device, comprising the steps of:

a first step of providing an amorphous semiconductor film including a catalyst element in at least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous semiconductor film;

a second step of performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a crystalline region;

a third step of patterning the semiconductor film to form a plurality of island-shaped semiconductor layers including an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, each of the plurality of island-shaped semiconductor layers including the crystalline region;

a fourth step of forming a gate insulating film on the plurality of island-shaped semiconductor layers;

a fifth step of forming a first gate electrode on the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor, and forming a second gate electrode conductive layer on the gate insulating film on the island-shaped semiconductor layer of the n-channel thin

film transistor;

a sixth step of doping the island-shaped semiconductor layers with an impurity element providing p-type conductivity using the first gate electrode and the second gate electrode conductive layer as a mask so as to form a source region, a drain region and a gettering region capable of attracting the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor while forming a gettering region capable of attracting the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor;

a seventh step of forming a mask that exposes a portion of the island-shaped semiconductor layer of the p-channel thin film transistor and covers the first gate electrode and a portion of the second gate electrode conductive layer;

an eighth of shaping the second gate electrode conductive layer using the mask to form the second gate electrode;

a ninth step of doping regions of the plurality of island-shaped semiconductor layers that are not covered with the mask or the second gate electrode, with an impurity element providing n-type conductivity, thereby amorphizing the gettering region of the island-shaped

semiconductor layer of the p-channel thin film transistor, while forming a source region and a drain region in the island-shaped semiconductor layer of the n-channel thin film transistor and further doping the gettering region with an impurity element providing n-type conductivity; and

a tenth step of performing a second heat treatment so as to move at least a portion of the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor to the gettering region thereof and at least a portion of the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor to the gettering region thereof;

wherein a step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of at least one of the n-channel thin film transistor and the island-shaped semiconductor layer of the p-channel thin film transistor is performed at least once at any point in time between after the fifth step to after the eighth step.

58. The method for manufacturing a semiconductor device according to claim 57, wherein the step of selectively

thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of at least one of the n-channel thin film transistor and the island-shaped semiconductor layer of the p-channel thin film transistor is performed simultaneously with the eighth step, and includes a step of selectively thinning or selectively removing a portion of the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor that is not covered with the second gate electrode conductive layer and a portion of the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor that is not covered with the mask.

59. A method for manufacturing a semiconductor device, comprising the steps of:

a first step of providing an amorphous semiconductor film including a catalyst element in at least a portion thereof, the catalyst element being capable of promoting crystallization of the amorphous semiconductor film;

a second step of performing a first heat treatment on the amorphous semiconductor film so as to crystallize at least a portion of the amorphous semiconductor film, thereby obtaining a semiconductor film including a

crystalline region;

a third step of patterning the semiconductor film to form a plurality of island-shaped semiconductor layers including an island-shaped semiconductor layer of an n-channel thin film transistor and an island-shaped semiconductor layer of a p-channel thin film transistor, each of the plurality of island-shaped semiconductor layers including the crystalline region;

a fourth step of forming a gate insulating film on the plurality of island-shaped semiconductor layers;

a fifth step of forming a first gate electrode on the gate insulating film on the island-shaped semiconductor layer of the n-channel thin film transistor, and forming a second gate electrode conductive layer on the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor;

a sixth step of doping the island-shaped semiconductor layers with an impurity element providing n-type conductivity using the first gate electrode and the second gate electrode conductive layer as a mask so as to form a source region, a drain region and a gettering region capable of attracting the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor while forming a gettering

region capable of attracting the catalyst element in the island-shaped semiconductor layer of the p-channel thin film transistor;

a seventh step of forming a mask that exposes a portion of the island-shaped semiconductor layer of the n-channel thin film transistor and covers the first gate electrode and a portion of the second gate electrode conductive layer;

an eighth step of shaping the second gate electrode conductive layer using the mask to form the second gate electrode;

a ninth step of doping regions of the plurality of island-shaped semiconductor layers that are not covered with the mask or the second gate electrode, with an impurity element providing p-type conductivity, thereby amorphizing the gettering region of the island-shaped semiconductor layer of the n-channel thin film transistor, while forming a source region and a drain region in the island-shaped semiconductor layer of the n-channel thin film transistor and further doping the gettering region with an impurity element providing p-type conductivity; and

a tenth step of performing a second heat treatment so as to move at least a portion of the catalyst element in the island-shaped semiconductor layer of the p-

channel thin film transistor to the gettering region thereof and at least a portion of the catalyst element in the island-shaped semiconductor layer of the n-channel thin film transistor to the gettering region thereof;

wherein a step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of at least one of the n-channel thin film transistor and the island-shaped semiconductor layer of the p-channel thin film transistor is performed at least once at any point in time between after the fifth step to after the eighth step.

60. The method for manufacturing a semiconductor device according to claim 59, wherein the step of selectively thinning or selectively removing a portion of the gate insulating film on the gettering region of the island-shaped semiconductor layer of at least one of the n-channel thin film transistor and the island-shaped semiconductor layer of the p-channel thin film transistor is performed simultaneously with the eighth step, and includes a step of selectively thinning or selectively removing a portion of the gate insulating film on the island-shaped semiconductor layer of the n-channel thin film transistor that is not covered

with the mask and a portion of the gate insulating film on the island-shaped semiconductor layer of the p-channel thin film transistor that is not covered with the second gate electrode conductive layer.

61. The method for manufacturing a semiconductor device according to claim 55, wherein a width of the second gate electrode conductive layer in a channel width direction is larger than that of the second gate electrode.

62. The method for manufacturing a semiconductor device according to claim 40, wherein a concentration of the impurity element providing n-type conductivity for doping the gettering region is about 1×10^{19} atoms/cm^3 to about 1×10^{21} atoms/cm^3, and a concentration of the impurity element providing p-type conductivity for doping the gettering region is about 1.5×10^{19} atoms/cm^3 to about 3×10^{21} atoms/cm^3.

63. The method for manufacturing a semiconductor device according to claim 22, wherein the second heat treatment is performed so as to activate at least one of an impurity providing n-type conductivity and an impurity providing p-type conductivity that are implanted into the source region and the drain region of the plurality of island-shaped semiconductor layers.

64. The method for manufacturing a semiconductor device according to claim 22, wherein the step of providing an amorphous semiconductor film includes the steps of:

forming a mask having an opening therein on the amorphous semiconductor film; and

doping a selected region of the amorphous semiconductor film with the catalyst element through the opening.

65. The method for manufacturing a semiconductor device according to claim 22, wherein the catalyst element is at least one element selected from the group consisting of Ni, Co, Sn, Pb, Pd, Fe and Cu.

66. The method for manufacturing a semiconductor device according to claim 22, further comprising, after the first heat treatment, a step of irradiating the semiconductor film with laser light.

67. A semiconductor device manufactured by the manufacturing method according to claim 22.

68. An electronic device, comprising the semiconductor device according to claim 1.

69. The electronic device according to claim 68, further comprising a display section including the semiconductor device according to claim 68.